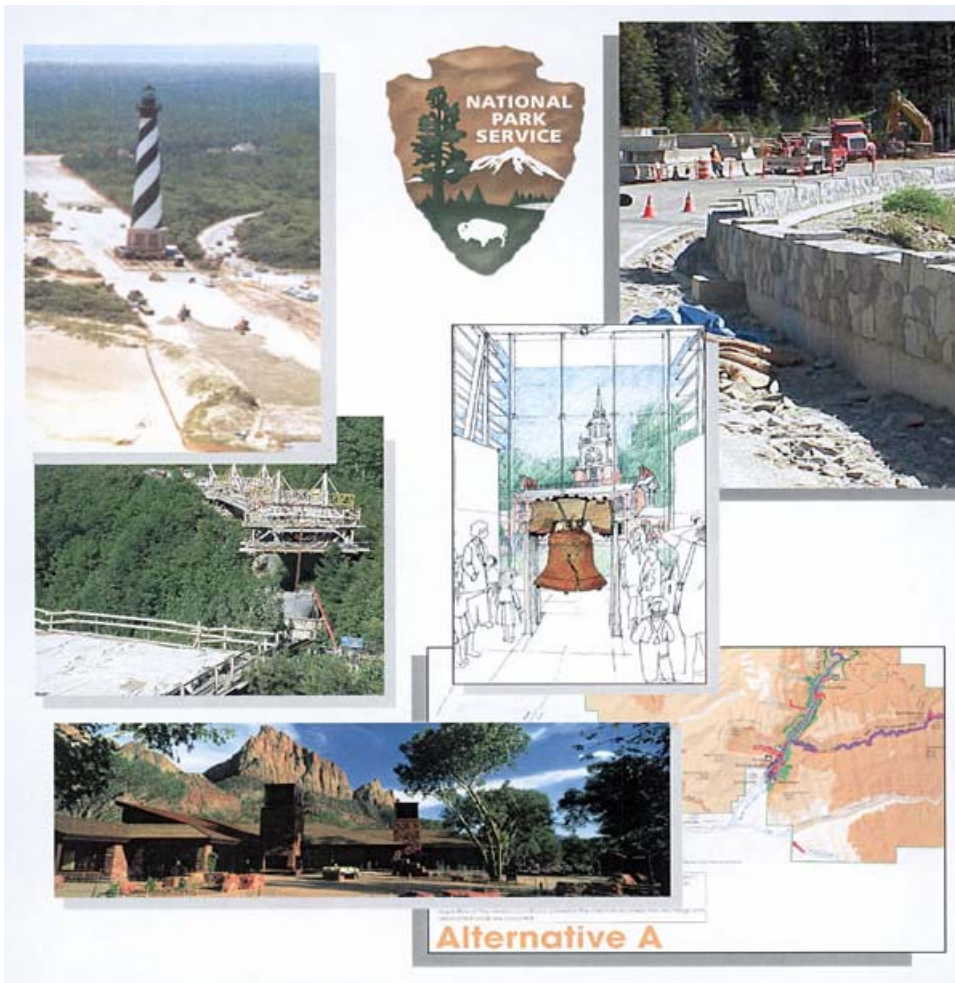


# National Park Service



## Review of A/E Cost Proposals

**Mike Giller**

**Denver Service Center**  
Planning, Design, and Construction Projects



## Review of A\E Cost Proposal

- A key step, A\E cost proposal is reviewed based upon level of effort to perform the work.
- Thorough review of the A\E cost proposal is the basis for preparation of the Government negotiation position.
- FAR requires a written analysis in the Record of Negotiations. Suggest you prepare this part of the Record of Negotiations in advance.



## Review of A\E Cost Proposals Course Objectives

1. Understand Roles and Responsibilities.
2. Determine if the cost proposal meets requirements of the RFP and Scope of Work.
3. Assess if the cost proposal meets limitations for A\E costs.
4. Understand how A\Es determine their fees
5. RS Means estimating guide introduction

# National Park Service



## 1. Roles and Responsibilities

- Contract Specialist
  - Receives price proposal from A/E
- COR, or Project Specialist
  - Performs technical evaluation
- Contracting Officer or Contract Specialist
  - Verifies the A/E IDIQ labor rates and other proposed costs
- Contracting Officer
  - Determines reasonableness of the A/E's price proposal



## 2. Review the A/E Cost Proposal with the RFP and Scope of Work

- Does proposal accurately reflect Scope of Work
  - What is included and What is missing
- What does the RFP require in pricing the proposal
  - Breakout of labor hours and direct expenses
  - ID of sub-consultant labor hours and direct expenses
  - ID trips, reviews, meetings, etc.
  - Compare labor rates; base contract & option year
  - Review Travel Regulations



## Compare the Cost Proposal to the Five Key Questions in a Project Agreement

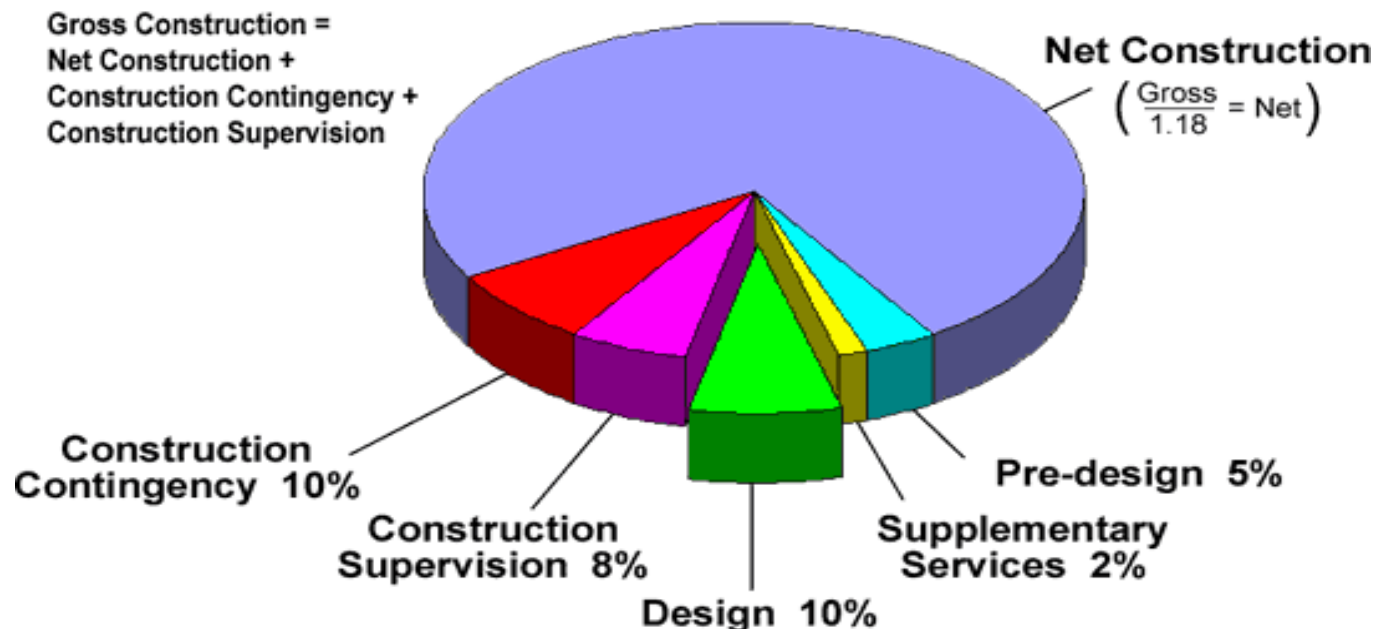
- *Why* is the project needed? - the problems and issues to be solved, needs to be addressed, and desired outcomes
- *What* will the project include? - products & services
- *Who* will do what? - roles & responsibilities
- *When* will services and products be produced? - project schedule/milestones
- *How much* will the project cost? - estimates

# National Park Service



## 3. Assess if the cost proposal meets limitations for A\E costs

### TOTAL PROJECT COST



# National Park Service



## Limitations for A/E Costs

- Brooks Bill 6% of estimated net construction limitation for construction documents (CD's)
- NAPA Report
  - 5% of Net Construction for Pre-Design Services
  - 10% of Net Construction for Design Services
    - Includes 6% Net Construction for CD's
  - 2% of Net Construction for Supplemental Services

*Your estimate is based on level of effort – not on these percentages*

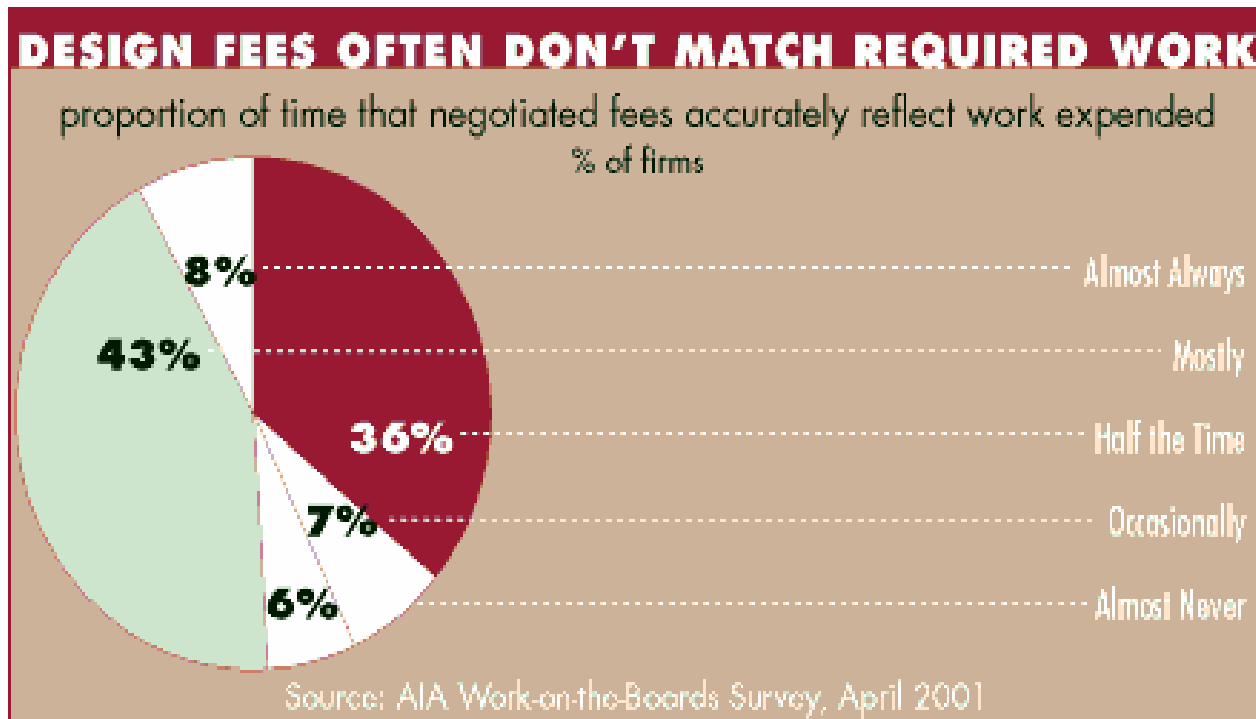


# National Park Service



## 4. Understand how A\Es determine their fees

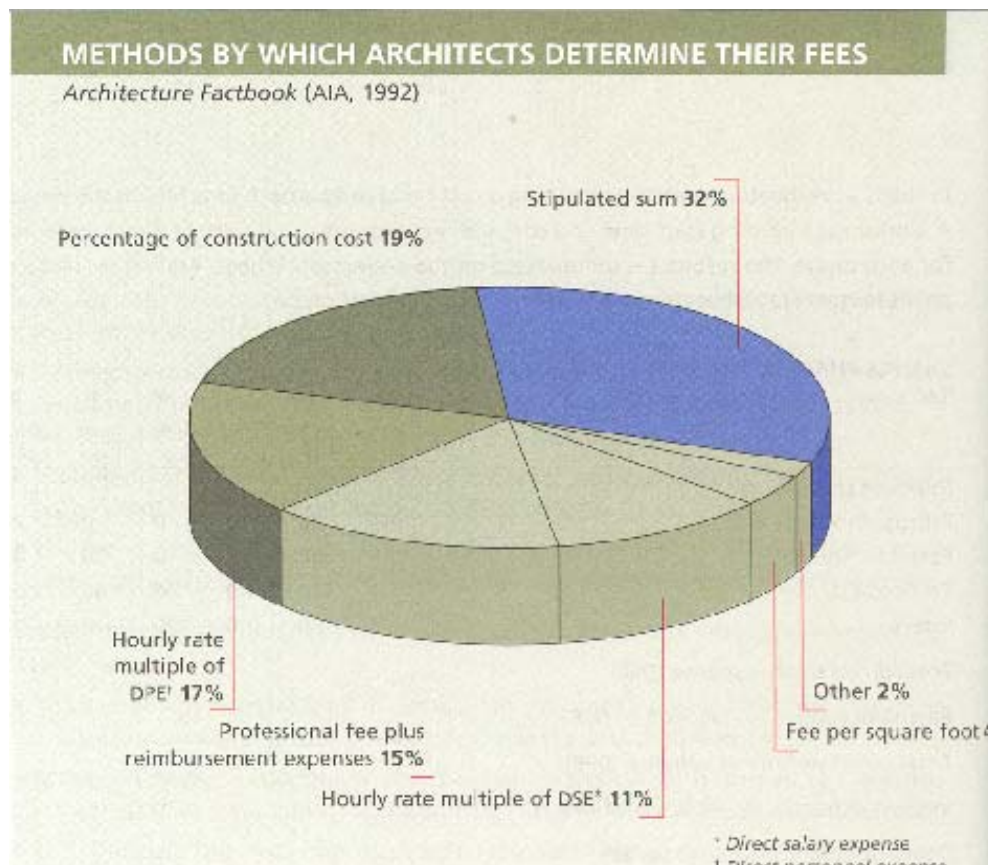
### Design Fees are Difficult to Estimate



*A\E's acknowledge fees don't always accurately reflect work expended*



## How Architects Determine Their Fees



- DSC projects are usually Stipulated (Lump) Sum

*- Though the architect may use other methods to develop and check their proposal*

# National Park Service



## A\E's Fee Basis

- **Cost** – The cost of providing service is the usual starting point for an A\E
- **Risks** – What risks does the A\E assume? A\E's may assume some uncertainty for compensation.
- **Profits** – What are the firms target profits?
- **Value** – What are the market value of the services? Are there special capabilities or technical expertise? How competitive is the market?

# National Park Service



## Consider your Project Type

### **Fees Vary by Type of Project**

average design fees as % of construction costs,  
includes routine construction administration

Hospitals **8.4%**

Other Health **8.1%**

High/Mid-rise Offices **6.2%**

Retail **3.9%**

Industrial **6.6%**

School Classrooms **5.0%**

Other Educational **5.5%**

Source: PSMJ Resources, Inc. 1999 and  
2000 A/E Fees and Pricing Survey

*A key price question:*

*How complex  
is your project?*

# National Park Service



## Consider your Project Size

### Smaller, Very Large Projects Typically Generate Higher Fees

average design fees as % of  
construction costs by size of fee,  
includes routine construction administration

Less than \$100k	<b>6.0%</b>
\$100k to \$500k	<b>6.3%</b>
\$500k to \$2M	<b>5.3%</b>
\$2M to \$5M	<b>5.8%</b>
More than \$5M	<b>6.7%</b>

Source: PSMJ Resources, Inc. 1999 and  
2000 A/E Fees and Pricing Survey

*There are economies of  
scale to a point -*

*However larger projects  
are often unique along  
several dimensions and  
require additional effort*



## “Rules of Thumb” on Design Costs

- Hours of Labor per Drawing Sheet
  - From 3 to 5 days for most sheets – more for complex sheets that have many original details.
- Fee as a Percent of Net Construction
- Typical breakdown between the Architect, Landscape Architect, and the Engineering Disciplines
  - 1/2 for Architecture, 1/3 for engineering, and site and specialty consultants the balance.



## 5. Architectural Fee Estimating Guidelines

Source: RS Means

- Check Government estimate based on level of effort

1 GENERAL REQUIREMENTS

General Requirements

R011

Overhead & Miscellaneous Data

R01107-010 Architectural Fees

Tabulated below are typical percentage fees by project size, for good professional architectural service. Fees may vary from those listed depending upon degree of design difficulty and economic conditions in any particular area.

Rates can be interpolated horizontally and vertically. Various portions of the same project requiring different rates should be adjusted

proportionately. For alterations, add 50% to the fee for the first \$500,000 of project cost and add 25% to the fee for project cost over \$500,000.

Architectural fees tabulated below include Structural, Mechanical and Electrical Engineering Fees. They do not include the fees for specialty consultants such as kitchen planning, security, acoustical, interior design, etc.

Building Types	Total Project Size in Thousands of Dollars						
	100	250	500	1,000	5,000	10,000	50,000
Factories, garages, warehouses, repetitive housing	9.0%	8.0%	7.0%	6.2%	5.3%	4.9%	4.5%
Apartments, banks, schools, libraries, offices, municipal buildings	12.2	12.3	9.2	8.0	7.0	6.6	6.2
Churches, hospitals, homes, laboratories, museums, research	15.0	13.6	12.7	11.9	9.5	8.8	8.2
Memorials, monumental work, decorative furnishings	—	16.0	14.5	13.1	10.0	9.0	8.2

### NPS Project Types

- Maintenance
- Administrative
- VC's
- Memorials



## RS Means Architectural Fee Guidelines

- Architectural fees
  - Includes Structural, Mechanical and Electrical Engineering.  
EQ: For a \$1M admin building fee is estimated at 8%
  - Does not include Civil Engineering and Landscape Architecture, acoustics, exhibits, interior design, etc.
- Architectural fee adjustments
  - For alterations add 50% for the first \$500k construction cost and 25% for the construction cost over \$500k.
  - Fees will vary based upon complexity and economic conditions.



# National Park Service



## Engineering Fees Estimating Guidelines

Source: RS Means

- To check Government estimate based on level of effort

### R01107-030 Engineering Fees

Typical Structural Engineering Fees based on type of construction and total project size. These fees are included in Architectural Fees.

Type of Construction	Total Project Size (in thousands of dollars)			
	\$500	\$500-\$1,000	\$1,000-\$5,000	Over \$5000
Industrial buildings, factories & warehouses	Technical payroll times 2.0 to 2.5	1.60%	1.25%	1.00%
Hotels, apartments, offices, dormitories, hospitals, public buildings, food stores		2.00%	1.70%	1.20%
Museums, banks, churches and cathedrals		2.00%	1.75%	1.25%
Thin shells, prestressed concrete, earthquake resistive		2.00%	1.75%	1.50%
Parking ramps, auditoriums, stadiums, convention halls, hangars & boiler houses		2.50%	2.00%	1.75%
Special buildings, major alterations, underpinning & future expansion		Add to above 0.5%	Add to above 0.5%	Add to above 0.5%

For complex reinforced concrete or unusually complicated structures, add 20% to 50%.

Typical Mechanical and Electrical Engineering Fees are based on the size of the subcontract. The fee structure for Mechanical Engineering is shown below; Electrical Engineering fees range from 2 to 5%. These fees are included in Architectural Fees.

Type of Construction	Subcontract Size							
	\$25,000	\$50,000	\$100,000	\$225,000	\$350,000	\$500,000	\$750,000	\$1,000,000
Simple structures	6.4%	5.7%	4.8%	4.5%	4.4%	4.3%	4.2%	4.1%
Intermediate structures	8.0	7.3	6.5	5.6	5.1	5.0	4.9	4.8
Complex structures	12.0	9.0	9.0	8.0	7.5	7.5	7.0	7.0

For renovations, add 15% to 25% to applicable fee.



## RS Means Engineering Fees Guidelines

- Structural fees
  - Included in the architectural fee and expressed as a percent of construction cost.  
EQ: For a \$1M admin building architectural is estimated at 8% and includes 1.7% for structural.  
Therefore fee estimate is \$17,000.
- Mechanical & Electrical fees
  - Included in the architectural fee and expressed as a percent of M&E *subcontract* construction cost.  
EQ: For a \$1M admin building M&E is estimated at 30% of \$1M, and the fee is 5% of subcontract construction cost.  
Therefore fee estimate is  $\$1\text{M} \times 30\% \times 5\% = \$15,000$ .

# National Park Service



## Cost Proposal check for Admin Building

% of Fee

Architectural Fee \$1M x 8% (Includes Structural, Mechanical & Electrical)	\$80,000	48% Arch Fee
Structural Engineering Fee \$1M x 1.7% (fee) = \$17,000	In Architectural Fee	17%
Mechanical & Electrical Engr. Fee \$1M x 30% (M&E subcontract) x 5% (fee) = \$15,000	In Architectural Fee	15%
Civil Engr. & Landscape Architecture \$1M x 20% (site subcontract) x 10% (fee) = \$20,000	\$20,000	20%
Total	\$100,000	100%

# National Park Service



## Check with DSC Cost Data

- DSC Historical Cost Data for Similar Projects
- DSC Experience with the A/E on other Task Orders



## Technical Evaluation of A\E Cost Proposal

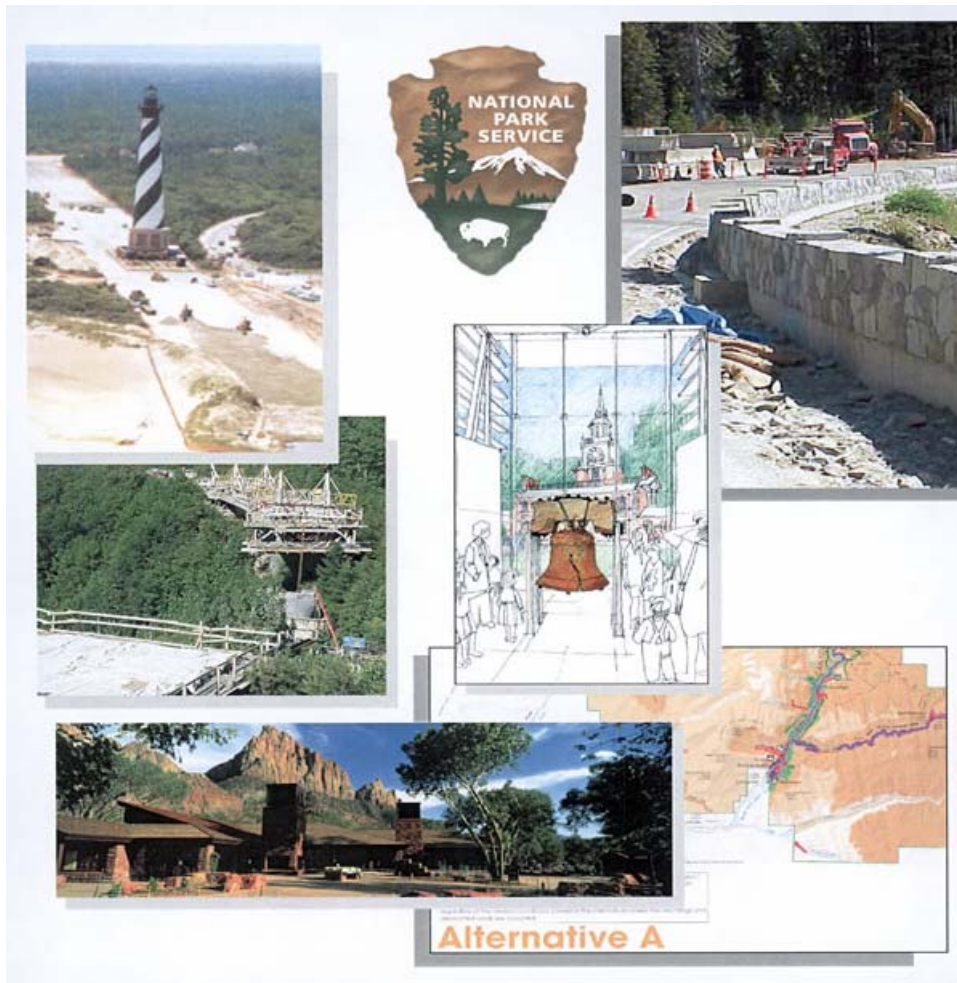
- Must be signed by PM for all task orders over \$100,000
- For task orders under \$100,000, verbal discussion documented in writing or through e-mail with the CO/CS is acceptable
- Fatal flaws – show-stoppers in the A\E proposal such as disclaimers or omitting portions of the RFP requirements.



## Review of A\E Cost Proposal Summary

1. Understand Roles and Responsibilities.
2. Determine if the cost proposal meets requirements of the RFP and Scope of Work.
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# National Park Service



## Preparation of Government's Pre-Negotiation Position

**Jon Holbrook**

**Mike Giller**

**Denver Service Center**  
Planning, Design, and Construction Projects

# National Park Service



## Preparation of Government's Pre-Negotiation Position

- Negotiation requires preparation
- Negotiation is critical to success however it is rarely taught
- Good negotiators are creative and principled problem solvers
- Good negotiators focus on interests, not positions

*You get  
what  
you negotiate*





## Process for Preparation of Pre-Negotiation Position

- Collect project information and review of A/E cost proposal
- Work with Contract Specialist to develop a pre-negotiation strategy
- ID areas to reduce costs and clarify scope
- ID areas of risk and uncertainty
- Fill out pre-negotiation requirements

# National Park Service



## DSC Professional Services Task Order Handbook

- Requirements are detailed here
- Templates are provided

The screenshot displays a web browser window titled "Professional Services Task Order Handbook - Microsoft Internet Explorer provided by National Park Service". The address bar shows the URL [http://workflow2.den.nps.gov/AE\\_Contracting.htm](http://workflow2.den.nps.gov/AE_Contracting.htm). The page content is organized into a sidebar and a main content area. The sidebar, on the left, contains a navigation menu with links such as Home, Workflow Outline, Special Resource Study, General Management Plan, PMIS Entry, Project Planning & Compliance, Design-Build, Design-Bid-Build, Task Order Handbook, Standards, Deliverables, & References, Forms, PWE Definitions, and Glossary. Below the menu is a search box with a "Find" button and a "Last Updated:" timestamp of Tuesday, September 9, 2003 10:51 AM. The main content area, on the right, features the title "DSC Professional Services Task Order Handbook" and a table of contents listing 28 numbered items. Below the table of contents are sections for "1. Identify AE", "ROLES & RESPONSIBILITIES", "Templates:", "Guidelines:", and "Additional Contracting-Related Links". The "1. Identify AE" section includes a list of roles and responsibilities, such as "Project Manager and/or COR" and "Contract Specialist (CS)". The "ROLES & RESPONSIBILITIES" section lists specific tasks for each role. The "Templates:" section provides links to "Justification for Selecting a Contractor Under Multiple Award IDIQ Contracts" and "Policy on Use of and Competition requirements under Servicewide National Park Service Multiple Award Indefinite Delivery - Indefinite Quantity (MIDI) Contracts". The "Guidelines:" section links to "Policy on Use of and Competition requirements under Servicewide National Park Service Multiple Award Indefinite Delivery - Indefinite Quantity (MIDI) Contracts". The "Additional Contracting-Related Links" section includes links to "Federal Acquisition Regulations (FAR)", "National Business Center (NBC) Home", and "Federal Business Opportunities (FedBizOpps)".

[http://workflow2.den.nps.gov/AE\\_Contracting.htm](http://workflow2.den.nps.gov/AE_Contracting.htm)

# National Park Service



## Roles and Responsibilities

- PM or COR
  - Provides to CS verbal Information (less than \$100K) or written technical evaluation (greater than \$100K)
- A\E Manager & Contract Specialist
  - Prepares & government's pre-negotiation position
    - Minimum/Maximum/Targeted Goals
    - Note major differences in design discipline types, level of effort, and listing work time reimbursable costs



## Negotiation Sequence

- The NPS receives the A/E proposal first.
- The NPS then reviews this proposal.
  - ID what parts of cost proposal are appropriate and have appropriate level of effort.
  - ID what parts of cost proposal are high and require more negotiation – Focus on these areas
- Evaluate inconsistencies in understanding and in level of effort.

# National Park Service



## Contract Services Information

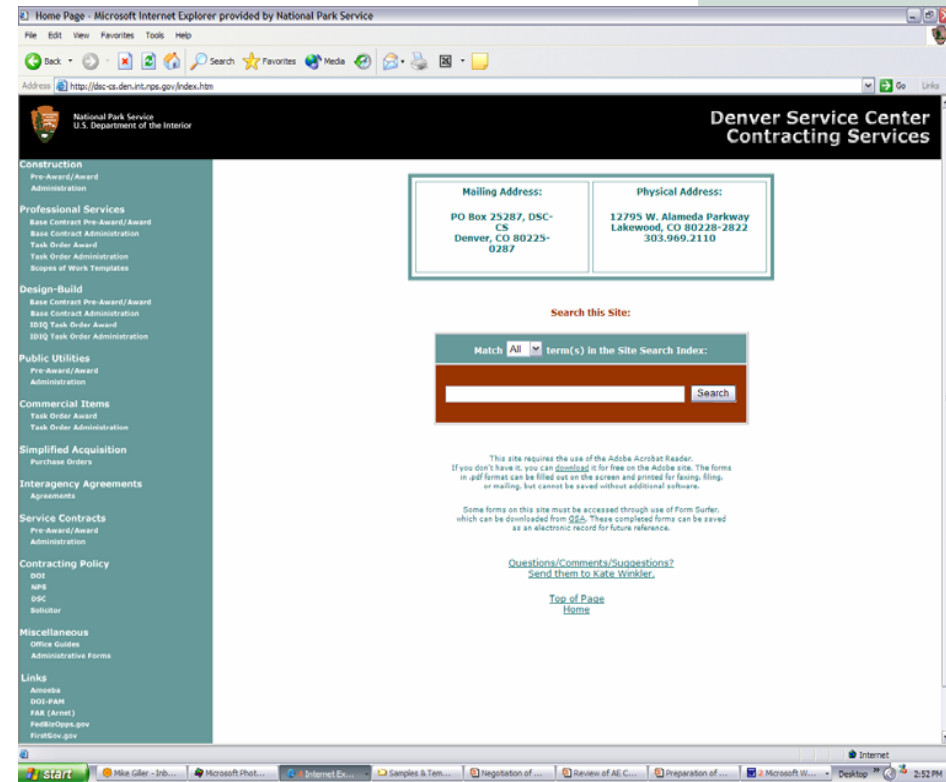
- All A/E Design Task Orders Require

- Pre-Negotiation Documents

- Purchase Request
- Request for Proposal
- Scope of Work
- Government Estimate

- Negotiations

- A/E Proposal
- Comparative Analysis
- Technical Review (>\$100k)
- Discussion of Hours and Cost
- Solicitor's Review (>\$500k)



CS Webpage

<http://dsc-cs.den.int.nps.gov/>



## Pre-Negotiation Worksheet

- To negotiate you must prepare and ID
  - NPS and A\E Interests and Needs
  - Key program and project agreement requirements
  - Information gained from Review of A\E Cost Proposals
  - Who is negotiating for NPS and for A\E
  - What are your positions?
    - Lowest
    - Target
    - Walk-away
  - Can you afford not to reach agreement?  
Do you have other alternatives to accomplish the work?

# National Park Service



## Worksheet



### Negotiation Preparation Worksheet

United States Department of the Interior / National Park Service /  
Denver Service Center  
12795 West Alameda Parkway / P.O. Box 25287 / DSC-PM /  
Denver, Colorado 80225-0287

1. Name

2. Title

3. Agency

4. Phone

5. Email

6. Date

7. Time

8. Location

9. Topic

10. Other

11. Purpose of the meeting

12. Objectives

13. Agenda

14. Participants

15. Other information

16. Date of the meeting

17. Time

18. Location

19. Topic

20. Other information

21. Date of the meeting

22. Time

23. Location

24. Topic

25. Other information

26. Date of the meeting

27. Time

28. Location

29. Topic

30. Other information

31. Date

32. Time

33. Location

34. Topic

35. Other information

36. Date of the meeting

37. Time

38. Location

39. Topic

40. Other information



## Strategies for Reducing Design Costs

- Reduced number of alternatives
- Design Guidelines can streamline design process
- A value analysis indicates key design strategies
- A well-written program clarifies NPS needs
- EA or EIS makes design mitigation recommendations
- NPS Standard Details expedite CDs
- Send the RFP to more than one A/E
- Schedule time for a contingency





## Project Risks

- ID the risks before you issue the Task Order
- Hazardous materials and Geotechnical
  - Many A\E's prefer not to have this work and liability as part of their contract.
- Historic preservation unknowns
- Changes in program and design requirements
- New design, technology, or product

*A high cost proposal  
may be due to high risks*



## Reduce the Risk & Reduce the Cost

- A\E's will price riskier work higher
  - Hazardous materials – separate study
  - Unknown conditions
    - Park operations constraints (Division 1)
    - Cultural and Natural Resource Issues
      - Reference the Environmental Screening Form (ESF)
  - A vague program – clarify
  - Appearance of multiple clients
    - ID Roles & consolidate comments

# National Park Service



## Discussion Memorandum



### United States Department of the Interior

NATIONAL PARK SERVICE  
DENVER SERVICE CENTER  
12795 W. Alameda Parkway  
P.O. Box 25287  
Denver, Colorado 80225 -0287

IN REPLY REFER TO:

D5215 (DSC -CS)

1443C \_\_\_\_\_ (use number on original contract)

Task Order T \_\_\_\_\_

#### Discussion Memorandum Standard Format For New Task Orders

A Discussion Memorandum must be prepared for every task order issued under an IDIQ contract. The Memorandum must address, at a minimum, the items identified below, in the format presented below. If the CS did not attend the discussion session, the discussion leader must provide the CS with the necessary information in writing. The CS's discussion memo can reference that document, comment on its reasonableness, and include the document in the file.

To: Contract Files, Denver Service Center

From: Contract Specialist, Denver Service Center

Through: Contracting Officer, Denver Service Center

Reference: Project Description, Indefinite Quantity Contract 1443C \_\_\_\_\_, Task Order T \_\_\_\_\_, Developed Area, Park Name, County, State, PARK -PKG

Subject: Discussion of Hours and Costs

Paragraph 1: Task Order Information:

[http://dsc-cs.den.int.nps.gov/Common/DiscussionMemo\\_TO.doc](http://dsc-cs.den.int.nps.gov/Common/DiscussionMemo_TO.doc)



## Summary of Pre-Negotiation Position

- Negotiation requires preparation.
- Develop a negotiation strategy.
- From the Review of A/E Cost Proposal ID areas to reduce costs and clarify scope.
- Clarify areas of risk and uncertainty.
- Follow Contract Services documentation requirements.